

REMARKS

STATUS OF CLAIMS

Claims 2-6, 8-16, 19-22, 24-30, 32-34, and 36-38 are pending in the application. Claims 2-6, 8-14, 34, and 36-38 are allowed; claims 15, 19-22, 24, 26, 29, 30, 32, and 33 are rejected, and claims 16, 25, 27 and 28 are objected to. With this response to Office Action, claims 2, 4, 6, 9, 15, and 29 are amended, claim 16 is canceled without prejudice, and new claim 39 has been added. No new matter has been added.

REJECTIONS UNDER 35 U.S.C. §102

Claims 15, 19-22, 24, 26, 29, 30, 32 and 33 are rejected under 35 U.S.C. §102(a) as being anticipated by Muller et al., U.S. Patent No. 6,524,308 ("Muller"). A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference. (See, M.P.E.P. §2131.)

In rejecting claims 15, 19-22, 24, 26, 29, 30, 32, and 33 as being anticipated by Muller, the Examiner states that Muller discloses "an applicator and its method of controlling a temperature of the applicator body that delivers energy comprising: an applicator body (Figure 3) comprising a proximal portion and a distal portion; an electrode surface (32 or 33) on the distal portion of the applicator body for delivering therapeutic electrical energy therethrough; a conduit that delivers a coolant on a path through at least a part of the distal portion of the applicator body; and one or more heating elements thermally coupled, from within the applicator body, to the distal portion of the applicator body and entirely beneath the electrode surface to deliver a heating energy to the coolant in the conduit, wherein the energy is sufficient to heat the coolant so that the electrode surface is at a desired temperature (col. 1, line 50-col. 2, line 36, col. 6, lines 20-44 and col. 7, line 29-col. 8, line 38)." The Examiner goes on to state that col. 2, lines 34-35 disclose "the electrode has a thermoelectric heating/cooling device in the form of a combination of resistance heaters and Peltier elements. This is interpreted as the back surface of the electrode has these elements thermally attached . . ."

With this response to Office Action, independent claim 15 has been amended to recite "[a] method of controlling a temperature of an applicator body . . . comprising: providing an

applicator body that comprises at least one electrode surface; delivering a coolant through a conduit in at least a portion of the applicator body at a substantially constant rate; delivering sufficient heat energy, from within the applicator body, to the at least one electrode surface by energizing one or more heating elements so that the at least one electrode surface of the applicator body is cooled by the coolant to a desired temperature; and delivering therapeutic electrical energy through the at least one cooled electrode surface, wherein providing the applicator body comprises providing the coolant in a *serpentine* path for distributing the coolant substantially evenly over the contact surface.” Thus, the word “serpentine” has been added to further describe the claimed coolant path used for distributing the coolant over the contact surface. This limitation was found in dependent claim 16, which the Examiner indicated was allowable over the cited prior art if rewritten in independent form. Accordingly, dependent claim 16 has been canceled without prejudice.

Based on the foregoing, Applicant respectfully submits that independent claim 15 is now in condition for allowance. Therefore, Applicant respectfully requests that the rejection of independent claim 15 under 35 U.S.C. §102 be withdrawn.

Independent claim 24 recites “[a]n applicator that delivers energy comprising: an applicator body comprising a proximal portion and a distal portion; an electrode surface on the distal portion of the applicator body for delivering therapeutic electrical energy therethrough; a conduit that delivers a coolant on a path through at least a part of the distal portion of the applicator body; and *one or more resistive heating elements thermally coupled, from within the applicator body, to the distal portion of the applicator body and entirely beneath the electrode surface* to deliver a heating energy to the coolant in the conduit . . . wherein the resistive heating elements are positioned to reduce a temperature differential across the electrode surface to less than about 2 degrees Celsius.” According to the Examiner, Muller discloses that “the electrode has a thermoelectric heating/cooling device in the form of a combination of resistance heaters and Peltier elements” which is interpreted by the Examiner “as the back surface of the electrode has these elements thermally attached.” This, according to the Examiner, anticipates the claim limitation reciting “one or more resistive heating elements thermally coupled, from within the applicator body, to the distal portion of the applicator body and entirely beneath the electrode surface to deliver a heating energy to the coolant in the conduit.”

Contrary to the position taken by the Examiner, there is no disclosure, teaching, or suggestion in Muller to provide an applicator body wherein one or more resistive heating elements are thermally coupled, from within the applicator body, to the distal portion of the applicator body and entirely beneath an electrode surface. As appreciated by the Examiner, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference. (See M.P.E.P. §2131.) The passage cited by the Examiner (col. 2, lines 34-35) makes no mention of the position of the thermoelectric heating and cooling device other than stating that the electrode or the electrode carrier may have such a device. (See col. 2, lines 34-35.) Although the Examiner interprets this passage as meaning that "the back surface of the electrode has these elements thermally attached," Applicant respectfully contends that there is no support for this interpretation. In particular, Muller does not disclose positioning resistive heating elements within the applicator body, let alone positioning the resistive heating elements in a distal portion of the applicator body such that they are entirely beneath the electrode surface.

Furthermore, FIG. 8 of Muller illustrates a diagrammatic view of an electrosurgery apparatus according to his invention. The electrosurgery apparatus illustrated in FIG. 8 does disclose a temperature control fluid heater (85). However, the temperature control fluid heater (85) is positioned adjacent a fluid pump (84) and flow meter (89) and exterior to the electrode catheter (82). This clearly illustrates that Muller does not disclose nor contemplate an applicator having "*one or more resistive heating elements thermally coupled, from within the applicator body, to the distal portion of the applicator body and entirely beneath the electrode surface* to deliver a heating energy to the coolant in the conduit" as recited in independent claim 24. Because Muller fails to disclose each and every element of Applicant's invention as recited in claim 24, Applicant respectfully submits that the reference does not anticipate claim 24. Therefore, Applicant respectfully requests that the rejection of independent claim 24 under 35 U.S.C. §102 be withdrawn.

Claims 19-22, 25-28, and 30 depend from independent claim 24, which is allowable for at least the reasons stated above. As such, these claims are allowable with their independent base claim. M.P.E.P. §2143.03.

With this response to Office Action, independent claim 29 has been amended to recite “[a]n applicator that delivers energy comprising: an applicator body comprising a proximal portion and a distal portion; an electrode surface on the distal portion of the applicator body for delivering therapeutic electrical energy therethrough; a conduit that delivers a coolant on a path through at least a part of the distal portion of the applicator body . . . and one or more heating elements thermally coupled, from within the applicator body, to the distal portion of the applicator body to deliver a heating energy to the coolant in the conduit, wherein the energy is sufficient to heat the coolant so that the electrode surface is at a desired temperature, and *wherein the coolant comprises a R134a refrigerant gas.*” Muller fails to disclose an applicator having a conduit that delivers a coolant on a path through at least a part of a distal portion of the applicator as claimed in independent claim 29, wherein the coolant comprises a R134a refrigerant gas.

Because Muller fails to disclose each and every element of Applicant’s invention as recited in claim 29, Applicant respectfully submits that the reference does not anticipate claim 29. Therefore, Applicant respectfully requests that the rejection of independent claim 29 under 35 U.S.C. §102 be withdrawn.

ALLOWABLE SUBJECT MATTER

According to the Examiner, claims 2-6, 8-14, 34, and 36-38 are allowed, and claims 16, 25, 27, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant thanks the Examiner for the indication of allowed and allowable claims. Applicant also respectfully suggests that dependent claims 32 and 33, which were indicated as rejected as being anticipated by Muller, should instead have been indicated as allowed because they depend from allowed independent claim 34.

NEW CLAIMS

With this response to Office Action, new claim 39 has been added. New claim 39 recites “[a]n applicator that delivers energy comprising: an applicator body comprising a proximal portion and a distal portion; an electrode surface on the distal portion of the applicator body for delivering therapeutic electrical energy therethrough; a conduit that delivers a coolant on a path

through at least a part of the distal portion of the applicator body, wherein the coolant path through the distal portion of the applicator is a serpentine path; and *one or more heating elements thermally coupled, from within the applicator body, to the distal portion of the applicator body and entirely beneath the electrode surface* to deliver a heating energy to the coolant in the conduit, wherein the energy is sufficient to heat the coolant so that the electrode surface is at a desired temperature.” For at least the reasons stated above in reference to the rejection of independent claim 24, Applicant respectfully suggests that new claim 39 is also in condition for allowance.

CONCLUSION

Applicant believes all claims are now in condition for allowance and a Notice of Allowance is respectfully solicited. If the Examiner believes that a teleconference would be of value in expediting the allowance of the pending claims, the undersigned can be reached at the telephone number listed below. If it is believed that any fees are necessary, the Commissioner is hereby authorized to charge or credit any such fees or overpayment to Deposit Account No. 50-1901 (Reference 687-3108/US).

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Respectfully submitted,

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